

Cercocarpus montanus / Bouteloua curtipendula Shrubland

COMMON NAME	Alderleaf Mountain-mahogany / Sideoats Grama shrubland
SYNONYM	Mountain Mahogany / Side-oats Grama Shrubland
PHYSIOGNOMIC CLASS	Shrubland (III)
PHYSIOGNOMIC SUBCLASS	Deciduous shrubland (III.B)
PHYSIOGNOMIC GROUP	Cold-deciduous shrubland (III.B.2)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (III.B.2.N)
FORMATION	Temperate cold-deciduous shrubland (III.B.2.N.a)
ALLIANCE	<i>Cercocarpus montanus</i> Shrubland Alliance

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM Upland

RANGE

Globally

This community is found on slopes in the Black Hills of South Dakota and Wyoming and on some of the lower mountain slopes of eastern Wyoming. It is found on slopes below ponderosa pine forests and above herbaceous communities. It has been reported in and around the Wildcat Hills of western Nebraska and in New Mexico. Its disjunct occurrence in New Mexico needs further study.

Wind Cave National Park

Stands of mountain mahogany are best developed in areas of limestone, especially the Minnekahta limestone which underlies the surface immediately west of the Red Valley (west of NPS Rd. 5). Smaller stands occur elsewhere, for example on Boland Ridge.

ENVIRONMENTAL DESCRIPTION

Globally

This community is almost exclusively found on slopes. These slopes are 20-40% with a variety of aspects (Hoffman and Alexander 1987). Drought stress is severe due to relatively little precipitation, moderate to steep slopes, and thin, poorly developed soils. Soils are loams and clay loams. The parent material is sandstone or limestone (Johnston 1987).

Wind Cave National Park

Mountain mahogany/side-oats grama shrublands occur most commonly on somewhat steep to steep slopes of all aspects, and are best developed in areas underlain by limestone. Smaller stands occur in areas of sandstones, such as on Boland Ridge.

MOST ABUNDANT SPECIES

Globally

<u>Stratum</u>	<u>Species</u>
Shrub	<i>Cercocarpus montanus</i>
Herbaceous	<i>Bouteloua curtipendula</i>

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<u>Stratum</u>	<u>Species</u>
Shrub	<i>Cercocarpus montanus</i> , <i>Rhus trilobata</i>
Herbaceous	<i>Bouteloua gracilis</i> , <i>Bouteloua curtipendula</i> , <i>Oryzopsis micrantha</i> , <i>Schizachyrium scoparium</i>

CHARACTERISTIC SPECIES

Globally

Bouteloua curtipendula, *Cercocarpus monanus*

Wind Cave National Park

Bouteloua curtipendula, *Cercocarpus montanus*

VEGETATION DESCRIPTION

Globally

Throughout its range, this community is a shrub-steppe community. Its physiognomy is similar to the chaparral of California. Vegetation cover is sparse to moderate. The dominant shrubs are evenly spaced with herbaceous species occurring in between

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Wind Cave National Park

individual shrubs. The dominant species, *Cercocarpus montanus*, is approximately 2 meters tall. *Rhus trilobata* var. *trilobata*, the other common shrub species, also grows to 2 meters. The herbaceous species rarely grow taller than 1 meter. *Bouteloua curtipendula* is the most abundant herbaceous species. *Artemisia frigida* is a typical smaller shrub. Common herbaceous species are the forbs *Aristida purpurea*, *Aster oblongifolius*, *Hedeoma hispida*, and the grass *Oryzopsis hymenoides*.

Wind Cave National Park

Mountain mahogany/side-oats grama shrublands at Wind Cave NP typically have moderate shrub cover, in the 20-50% range. Structure and species composition of mountain mahogany stands are fairly consistent. Sometimes the shrub component can be split into tall and short strata. Mountain mahogany is strongly dominant; squaw-bush (*Rhus trilobata*) occurs frequently, and is occasionally common. Broom snakeweed (*Gutierrezia sarothrae*) and prairie sagebrush (*Artemisia frigida*) are common short shrubs. Herbaceous cover is variable, ranging from 10 to greater than 75%. Side-oats grama (*Bouteloua curtipendula*), blue grama (*Bouteloua gracilis*), green needlegrass (*Nassella viridula*), little mountain-ricegrass (*Oryzopsis micrantha*) and little bluestem (*Schizachyrium scoparium*) occur frequently.

OTHER NOTEWORTHY SPECIES

CONSERVATION RANK G5

DATABASE CODE C EGL001086

MAP UNITS

The mountain mahogany/side-oats grama community corresponds to map units 30 and 31, mountain mahogany / side-oats grama shrublands I and II, on the Wind Cave vegetation map.

COMMENTS

Wind Cave National Park

A few mountain mahogany stands were found with a significant ponderosa pine component, making classification difficult. Mountain mahogany/side-oats grama shrubland is limited in extent, and many of the stands were visited during preparation of the vegetation map.

REFERENCES

Bourgeron, P.S., L.D. Engelking, H.C. Humphries, E. Muldavin, and W.H. Moir. 1993. Assessing the conservation value of the Gray Ranch: rarity, diversity and representativeness. Unpublished report prepared for The Nature Conservancy by the Western Heritage Task Force, Boulder, CO. (Volume I and II).

Hoffman, G.R., and R.R. Alexander. 1987. Forest vegetation of the Black Hills National Forest of South Dakota and Wyoming: A habitat type classification. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station Res. Pap. RM-276. Fort Collins, CO. 48 p.

Johnston, B.C. 1987. Plant associations of region two: potential plant communities of Wyoming, South Dakota, Nebraska, Colorado, and Kansas. R2-ECOL-87-2. USDA Forest Service, Rocky Mountain Region Lakewood, CO. 429 p.

Thilenius, J.F. 1971. Vascular plants of the Black Hills of South Dakota and adjacent Wyoming. USDA Forest Service Research Paper RM-71. Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.